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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/04/2004

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EXAMINER

TRAN, KHANH C

ART UNIT

PAPER NUMBER

2631

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/671,326

Applicant(s)

CHENG ET AL.

Examiner

Khanh Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. The Amendment filed on 07/15/2004 has been entered. Claims 1-20 are pending in this Office action.

### *Response to Arguments*

2. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 5 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for "the second communications terminal exchanges communication information over the second communication loop", does not reasonably provide enablement for "the first communications terminal exchanges communication information over second communication loop while the second communications terminal exchanges communication information over the second communication loop". The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

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- Regarding claim 5, in downstream communication, both communications terminals can receive signals simultaneously through the second communications loop. However, for upstream configuration, the packets from the two communications terminals are collided if not properly multiplexed. It's not quite clear that how upstream information from the first communication terminal is time-shared with the upstream information from the second communication terminal over the second (share) communication loop. The original disclosure does not provide enough detailed information for the claim to be enabled.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. U.S. Patent 5,901,205 in view of Davis U.S. Patent 6,498,806 B1.

Regarding claim 1, Smith et al. invention relates to telephony and data communication and, more particularly, to a system and method of increasing data rates and adaptively allocating this increased capacity between multiple applications. As disclosed in column 1 lines 57-67, see also figure 3, the invention utilizes a multi-line

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DSL modem 52, a first digital subscriber line 54, a second digital subscriber line 56, and a telephone 58. Referring to figure 3,

- Multi-line DSL modem 52 is configured to couple to another multi-line DSL modem 57 at the Central Office (CO) via the first digital subscriber line 54, CO is considered to be the claimed network node. The first digital subscriber line 54 corresponds to the claimed first master communication loop. Multi-line DSL modem 52 is further configured to the CO via the second digital subscriber line 56, which correspond to the claimed second communication loop. The second digital subscriber line 56 is configured to serve the telephone 12.
- Smith et al. does not show the claimed modem having a transceiver, which comprises a first interface and second interface as set forth in the claim. However, as well known in the modem arts, a modem includes a transceiver and line interfaces. Davis implements a multi-drop (multi-line) ADSL modem 30 shown in figure 3 of another US patent. The multi-line ADSL modem 30 includes a transceiver, multi-line DSL interfaces 38 for connecting to plurality of local loops. The other interface is on the same side with the receiver and transmitter (not shown in the figure), as appreciated by one of ordinary skill in the art. Smith et al. invention utilizes both multi-line DSL modems at customer premise (CP) and CO. Davis teachings apply the multi-drop ADSL modem to serve multiple customers on multiple local loops. Both inventions are in the same field

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of endeavor, and because modem always includes a transceiver and line interfaces; therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made that Smith et al. multi-line DSL modem can be modified to include a transceiver and line interfaces similar to the multi-drop ADSL modem as taught by Davis.

- With the modification, one interface is configured to serve a communication terminal, while the multi-line DSL interfaces 38 is configured to couple to DSL line 54, DSL line 56, and line 58, which serves telephone 12.

Regarding claim 2, referring to figure 3, telephone 12 can be physically remote from the multi-line DSL modem 52, which is connected to a communication terminal as discussed above.

Regarding claim 3, Davis multi-drop modem is an ADSL modem. Hence, the transceiver exchanges communication information in a format compatible with ADSL standards as claimed in the instant application.

Regarding claim 4, as disclosed in Smith et al. invention, column 4 lines 37-40, multi-line DSL modems 52 and 57 are configured to provide data communications across both connections 54 and 56 when neither telephone 12 nor 34 is in use.

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Regarding claim 6, as recited in claim 4, multi-line DSL modems 52 and 57 are configured to provide data communications across both connections 54 and 56 when neither telephone 12 nor 34 is in use. DSL modem 57 located in the CO serving another communication terminal (not shown in the figure) as appreciated by one of ordinary skill in the art.

Regarding claim 7, in column 14 lines 10-15, Davis discloses Time Division Multiplexing (TDM) is utilized between active clients (loops) to share the bandwidth in a multi-line ADSL modem.

Regarding claim 8, modem 52 is adapted to share second line 56 with telephone 12. When telephone 12 is not in use, multi-line DSL modem 52 is configured to receive data communication over connection 56. In view of that, the multi-line DSL modem 52 can be adapted to receive downstream communication information from multi-line DSL modem 57, see figure 3.

Regarding claim 9, similar to the rejection argument as for claim 8, when telephone 12 is not in use, multi-line DSL modem 52 is configured to communicate data over connection 56. In view of that, the multi-line DSL modem 52 can be adapted for both upstream and downstream communication information to multi-line DSL modem 57.

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Regarding claim 10, in column 3 lines 20-27, connections 54 and 56 are twisted pair digital subscriber lines.

Regarding claim 11, referring to figure 3 in Davis invention, the multi-line ADSL modem 30 includes POTS XFMR splitters separating ADSL information from voice information, and it can be configured to allow voice information to communication over communication loop as appreciated by one of ordinary skill in the art.

4. Claims 13-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. U.S. Patent 5,841,840 and U.S. Patent 5,901,205 as applied to claims 12 and 19 below, and further in view of Davis U.S. Patent 6,498,806 B1.

Regarding claims 13 and 20, Smith et al. does not show the first modem exchanging communication information compatible with ADSL standards. However, using analogous rejection argument as for claim 1 for combining with Davis teachings, Smith et al. provides a multi-line modem and method for utilizing multiple lines when phones are not in use to increase data rate in both U.S. patents, one invention applies to digital subscriber lines. Davis teachings provide a multi-drop ADSL modem to serve multiple customers on multiple local loops. All inventions are in the same field of endeavor, and because DSL modem in residential area is implemented in ADSL mode as appreciated by one of ordinary skill in the modem arts, therefore, it would have been



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obvious for one of ordinary skill in the art at the time the invention was made that Smith et al. multi-line DSL modem can be modified to work in ADSL standards.

Regarding claim 14, referring to Smith et al. U.S. Patent 5,841,840, in column 3 lines 15-45, when telephone is not in use, modems 31 and 32 connect through lines 37 and 38 respectively, to form a bonded high speed data connection 39 operating at higher bandwidth than available over first line 16. Hence, in that mode, modems 31 and 32 as an integrated communication 30 communicate information simultaneously over first communication line 16, and second communication line 17, each at 33 kbps data rate, see column 3 lines 15 through 37, also figure 1.

Regarding claim 15, referring to figure 3 in Davis invention, the multi-line ADSL modem 30 includes POTS XFMR splitters separating ADSL information from voice information, and allowing voice information to communication over communication loop. Hence, first CP modem 31 can be modified to have POTS XFMR splitter separating ADSL information from voice information, and allowing voice information to communication over communication loop 16.

Regarding claim 16, referring to figure 1 in Smith et al. U.S. Patent 5,841,840, in data transfer mode when telephone is not in use, CP modem 31 can be adapted to receive downstream information over line 17 through lines 37-38.

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Regarding claim 17, referring to figure 1 in Smith et al. U.S. Patent 5,841,840, in data transfer mode when telephone is not in use, CP modem 31 can be adapted to receive upstream and downstream information over line 17 through lines 37-38.

Regarding claim 18, Smith et al. invention utilizes existing telephone lines, which are twisted pairs of conductors.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 12 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Smith et al. U.S. Patent 5,841,840.

Regarding claim 12, referring to figure 1,

- first CP modem 31 serves computer 33;
- second CP modem 32 serves residential telephones 36;

a network 20 coupled to first CP modem 31 through first line 16, corresponding to the claimed first master communication loop, the network 20 coupled to second CP modem 32 through second line 17, corresponding to the claimed second

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communication loop, wherein first CP modem 31 is also coupled to the network 20 through line 37, line 38, modem 32, and line 17 corresponding to the second communication loop.

Regarding claim 19, Smith et al. invention for multiple line modem and a method for enabling a user to automatically usurp two or more telephone lines for data transfer when the telephone is not in use. Hence, when both telephone lines are operating in data transfer mode, approximately twice the data transfer rate can be transported, thereby almost doubling the speed of the data transfer.

In column 3 line 49 through column 4 line 5, figure 2 is a schematic view illustrating the multiple line modem and method in a typical network connection between central site and a customer premise where first line 16 operates in data transfer mode and second line 17 operates in voice transfer mode. First CP modem 31 is coupled to computer 33 and to a network 20, which corresponds to the network node as claimed in the instant application. Hence, first line 16 is representative of the claimed first communication loop. Connected to second CP modem 32 through line 42 are residential telephones 36, which are allowed to communicate to network 20 through the second line 17 using ordinary telephony service when second CP modem 32 detects a request for telephone service. In view of the foregoing disclosure, the second line 17 is configured to couple the network 20 to residential telephones 36.

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When the telephone is not in use, second line 17 is switched to a data transfer mode. Modems 31 and 32 connects through lines 37 and 38 respectively, to form a bonded high speed data connection 39 serving computer 33, see figure 1, column 3 lines 23-30. Hence, in data transfer mode, computer 33 exchanges communications information to the network simultaneously over first line 16 and second line 17.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Garland et al. U.S. Patent 6,038,297 discloses "System for Party Line Suppressed Ringing Access of Subscriber Lines".

Staples et al. U.S. Patent 6,295,357 B1 discloses "System and Method for Ringing Other Subscriber Telephones Connected To A Telephone Line During Data Communications On The Telephone Line".

Bemer et al. U.S. Patent 6,408,056 B1 discloses "Local Loop Interceder".

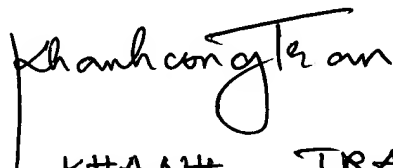
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Tran whose telephone number is 571-272-3007. The examiner can normally be reached on Tuesday - Friday from 08:00 AM - 05:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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